

CLAIMS

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1. A computerized method for use in simulating an operation of an electronic system, said method being carried out using a computer system, said method comprising the steps of:
  - generating a physically-accurate description of a first portion of said system, said physically-accurate description comprising actual physical characteristics of said first portion;
  - generating an approximate model of a remaining portion of said system, said model being based upon hierarchical analysis of said remaining portion; and
  - using both said physically-accurate description and said approximate model to simulate the operation of said system.
2. A method according to claim 1, wherein:
  - said first portion and said remaining portion are selected according simulation optimization rules.
3. A method according to claim 1, wherein:
  - said first and remaining portions are selected so as to optimally reduce simulation error.
4. A method according to claim 1, wherein:
  - said operation of said system comprises a timing operation.

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1 5. A computerized system for use in simulating an operation of an electronic system,  
2 comprising the steps of:

3 a modeling engine that modifies a first model of said electronic system, said first  
4 model including only hierarchical analysis functions estimating operation of said elec-  
5 tronic system, said modeling engine modifying said first model to include both at least  
6 one hierarchical analysis function estimating operation of a portion of said electronic  
7 system and a physically-accurate description of another portion of said electronic system;  
8 and

9 a simulation engine that simulates the operation of said electronic system based  
10 upon both said at least one function and said physically-accurate description.

1 6. A computerized system according to claim 5, wherein:  
2 said portions are selected so as to optimally reduce simulation error.

1 7. A computerized system according to claim 5, wherein:  
2 said portions are selected based upon simulation optimization rules.

1 8. A computerized system according to claim 5, wherein:  
2 said operation of said electronic system comprises a timing operation.

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1 9. A computer-readable memory containing computer-executable program instruc-  
2 tions comprising instructions for:

3 generating a physically-accurate description of a first portion of an electronic  
4 system, said physically-accurate description comprising actual physical characteristics of  
5 said first portion;  
6 generating an approximate model of a remaining portion of said system, said  
7 model being based upon hierarchical analysis of said remaining portion; and  
8 simulating operation of said system using both said description and said model.

1 10. A computer-readable memory according to claim 9, wherein:  
2 said portions are selected to optimally reduce simulation error.

1 11. A computer-readable memory according to claim 9, wherein:  
2 said first portion and said remaining portion are selected according to simulation  
3 optimization rules.

1 12. A computer-readable memory according to claim 9, wherein:  
2 said operation of said system comprises a timing operation.

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